

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of: Thomas LUDWIG et al. :
Serial No.: 10/591,924 :
Filed: May 14, 2007 :
For: DEVICE FOR DETECTING THE :
COMBUSTION-CHAMBER :
PRESSURE IN AN INTERNAL :
COMBUSTION ENGINE :
Examiner: Eric Scott McCall :
Art Unit: 2855 :
Confirmation No.: 5392 :
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Signature: /Kevin Kambo/
Kevin Kambo

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

SIR:

On October 5, 2009, Appellants filed a Notice of Appeal from the last decision of the Examiner contained in the Final Office Action dated June 12, 2009 in the above-identified patent application.

In accordance with 37 C.F.R. § 41.37, this brief is submitted in support of the appeal of the rejections of claims 13, 20, 22, 23, and 27. For at least the reasons set forth below, the rejections of claims 13, 20, 22, 23, and 27 should be reversed.

1. REAL PARTY IN INTEREST

The real party in interest in the present appeal is ROBERT BOSCH GMBH of Stuttgart in the Federal Republic of Germany, which is the assignee of the entire right, title and interest in and to the present application.

2. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellants or the assignee, ROBERT BOSCH GMBH, “which may be related to, directly affect or be directly affected by or have a bearing on the Board’s decision in the pending appeal.”

3. STATUS OF CLAIMS

Claims 13, 20, 22, 23, and 27 are pending.

Claims 1 to 12, 14 to 19, 21, and 24 to 26 have been canceled.

Claims 13, 20, 22, 23, and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,539,787 (“Murai et al.”).

A copy of the appealed claims, *i.e.*, claims 13, 20, 22, 23, and 27, is attached hereto in the Claims Appendix.

4. STATUS OF AMENDMENTS

In response to the Final Office Action dated June 12, 2009, Appellants filed a “Reply Under 37 C.F.R. § 1.116” (“the Reply”) on August 21, 2009. The Reply presented no proposed claim amendments. It is therefore Appellants’ understanding that the claims as included in the annexed “Claims Appendix” reflect the current claims.

5. SUMMARY OF THE CLAIMED SUBJECT MATTER

The appealed claims contain one (1) independent claim, *i.e.*, claim 13.

Independent claim 13 relates to a device. *Specification* at page 3, lines 2 to 5. Claim 13 recites that the device includes a glow plug (11). *Specification* at page 3, line 3; Figure 1. According to claim 13, the glow plug (11) includes a housing (13) via which the glow plug (11) is mounted inside a cylinder head (14) of an internal combustion engine. *Specification* at page 3, lines 2 to 5; Figure 1. According to claim 13, the glow plug (11) includes at a first end (16) a heating pin (17) that projects at least partially into a combustion

chamber (19) of the internal combustion engine when the glow plug is installed.

Specification at page 3, lines 7 to 9; Figure 1. Claim 13 recites that the heating pin (17) is affixed inside the glow plug (11) with the aid of a fixation member (22). *Specification* at page 3, lines 9 to 10; Figure 1. Claim 13 recites that a sensor (26) is situated in the housing (13) between the fixation member (22) and a second end (24) of the glow plug (11).

Specification at page 3, lines 18 to 19; Figure 1. According to claim 13, the sensor (26) is disposed separately from the heating pin (17) in a force-locking manner between the fixation member (22) and a fixation element (29). *Specification* at page 4, lines 29 to 31; Figure 1. Claim 13 recites that the sensor (26) is implemented with prestressing. *Specification* at page 4, lines 28 to 29. Claim 13 recites that the fixation element (29) is a sleeve crimped with the housing (13). *Specification* at page 3, lines 26 to 27.

6. **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The ground of rejection to be reviewed on appeal is whether claims 13, 20, 22, 23, and 27 are unpatentable, under 35 U.S.C. § 103(a), over Murai et al.

7. **ARGUMENTS**

Claims 13, 20, 22, 23, and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Murai et al. It is respectfully submitted that Murai et al. do not render unpatentable these claims for at least the following reasons.

Claim 13 relates to a device, including, in relevant part, a sensor situated in the housing between the fixation member and a second end of the glow plug, the sensor disposed separately from the heating pin, in a force-locking manner between the fixation member and a fixation element implemented with prestressing, the fixation element being a sleeve crimped with the housing.

Murai et al. do not disclose the feature of a sensor situated in the housing between the fixation member and a second end of the glow plug. In the Final Office Action, the Examiner on page 4 apparently considers the washer (207) of Murai et al. to constitute a fixation member of the present claim and apparently considers the top of Figure 1 of Murai et al. to constitute a second end of the glow plug of the present claim. However, as is apparent from Figure 1 of Murai et al., the sensor (300) is not between the washer (207) and the top of Figure 1, but rather is offset from the washer (207) to the right and left.

Furthermore, the Examiner apparently considers the dielectric bush (209/209b) of Murai et al. to constitute a fixation element of the present claim and states that

Murai et al. therefore disclosed a sensor “between the fixation member (207) and a fixation element (209/209b).” (emphasis added). However, Figure 1 clearly shows that the sensor (300) is not positioned between the fixation member (207) and the fixation element (209/209b), but rather is offset from the fixation member (207) to the right and left.

The Final Office Action *admits* on page 4 that Murai et al. fails to disclose the dielectric bush 209, *i.e.*, the alleged fixation element, being a sleeve crimped with a housing. However, the Final Office Action asserts that “it would have been obvious to one having ordinary skill in the art armed with said teaching [that Murai et al. set forth that the fixation element (209/209b), which is a sleeve, *engages* the inner circumferential surface of the housing (201)] to use crimping as the form of engaging” based on that alleged motivation “that crimping is a commonly used method of attaching coaxial sleeves together because it is a very inexpensive yet effective way.” The Final Office Action apparently ignores that the small diameter section 209a of the dielectric bush, *i.e.*, the alleged fixation element, is located at the hexagonal head section 201a of the housing 201 as plainly illustrated in Figure 1. There is no apparent reason why the hexagonal head section 201a would be crimped so as to secure the small diameter section 209a. Moreover, crimping requires *deformation*, and it appears that such deformation would interfere with the assembly and/or operation of the glow plug 100 described by Murai et al. Accordingly, the alleged motivation -- which is merely conclusory and otherwise unsupported -- is insufficient.

The Final Office Action contends that “Applicant has admitted that as a functional equivalent to crimping, the fixation element could rest directly against the sensor,” referring to page 3, lines 26 to 28 of the Specification. At page 3, lines 26 to 28, the Specification merely states that “[f]ixation element 29 is embodied as a sleeve crimped inside housing 13, for instance, and as an alternative could also rest directly against sensor 26.” Nothing in the foregoing statement constitutes an admission that resting a fixation element against a sensor is a functional equivalent to crimping as alleged in the Final Office Action, and the Final Office Action’s contentions in this regard constitute an entire mischaracterization of the foregoing statement.

In view of the foregoing, it is respectfully submitted that Murai et al. do not disclose, or even suggest, all of the features included in claim 13. Consequently, it is respectfully submitted that Murai et al. do not render unpatentable claim 13, or claims 20, 22, 23, and 27, which depend from claim 13.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

8. CLAIMS APPENDIX

A “Claims Appendix” is attached hereto and appears on the one (1) page numbered “Claims Appendix.”

9. EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. No other evidence has been entered by the Examiner or relied upon by Appellants in the appeal. An “Evidence Appendix” is nevertheless attached hereto and appears on the one (1) page numbered “Evidence Appendix.”

10. RELATED PROCEEDINGS APPENDIX

As indicated above in Section 2, “[t]here are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellants or the assignee, ROBERT BOSCH GMBH, ‘which may be related to, directly affect or be directly affected by or have a bearing on the Board’s decision in the pending appeal.’” As such, there are no “decisions rendered by a court or the Board in any proceeding identified pursuant to [37 C.F.R. § 41.37(c)(1)(ii)]” to be submitted. A “Related Proceedings Appendix” is nevertheless attached hereto and appears on the one (1) page numbered “Related Proceedings Appendix.”

11. CONCLUSION

For at least the reasons indicated above, Appellants respectfully submit that the art of record does not disclose or suggest the subject matter as recited in the claims of the above-identified application. Accordingly, it is respectfully submitted that the subject matter as set forth in the claims of the present application is patentable.

In view of all of the foregoing, reversal of the rejection set forth in the Final Office Action is therefore respectfully requested.

Respectfully submitted,

Dated: November 20, 2009

/Clifford A. Ulrich/
By: Clifford A. Ulrich (Reg. No. 42,194) for
Gerard A. Messina (Reg. No. 35,952)
KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

CLAIMS APPENDIX

13. A device, comprising:

a glow plug including a housing via which the glow plug is mounted inside a cylinder head of an internal combustion engine, the glow plug further including at a first end a heating pin that projects at least partially into a combustion chamber of the internal combustion engine when the glow plug is installed, the heating pin being affixed inside the glow plug with the aid of a fixation member; and

a sensor situated in the housing between the fixation member and a second end of the glow plug, the sensor disposed separately from the heating pin, in a force-locking manner between the fixation member and a fixation element implemented with prestressing, the fixation element being a sleeve crimped with the housing.

20. The device according to claim 13, wherein the sensor is separated from the fixation member by at least one spacer member.

22. The device according to claim 20, wherein the spacer member is an intermediate sleeve.

23. The device according to claim 22, wherein the intermediate sleeve is made of graphite.

27. The device according to claim 13, wherein the sensor is a force sensor embodied as a piezo ring.

EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§1.130, 1.131, or 1.132. No other evidence has been entered by the Examiner or relied upon by Appellants in the appeal.

RELATED PROCEEDINGS APPENDIX

As indicated above in Section 2 of this Appeal Brief, “[t]here are no other prior or pending appeals, interferences or judicial proceedings known by the undersigned, or believed by the undersigned to be known to Appellants or the assignee, ROBERT BOSCH GMBH, ‘which may be related to, directly affect or be directly affected by or have a bearing on the Board’s decision in the pending appeal.’” As such, there are no “decisions rendered by a court or the Board in any proceeding identified pursuant to [37 C.F.R. § 41.37(c)(1)(ii)]” to be submitted.